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The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 26

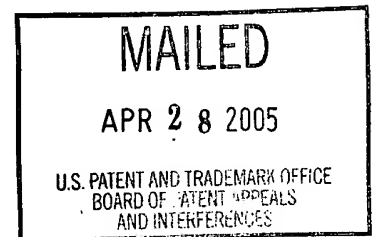
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK L. SKARPNESS
and NIRANJAN PARAMPALLI

Appeal No. 2004-1676
Application 09/263,918¹

ON BRIEF



Before KRASS, BARRETT, and SAADAT, Administrative Patent Judges.
BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the final rejection of claims 1, 4, 5, and 7-16.

We affirm.

¹ Application for patent filed March 5, 1999, entitled "Method for Interfacing an ATM Network to a PC by Implementing the ATM Segmentation and Reassembly Functions in PC System Software."

BACKGROUND

The invention relates to segmenting and reassembling asynchronous transfer mode (ATM) data in an ATM interface. In the past, segmentation and reassembly (SAR) was implemented on personal computer using a chip, which had the disadvantages of cost and limited flexibility. The invention implements SAR functions in software executed on a central processing unit (CPU), in particular, the CPU of a personal computer.

Claim 1 is reproduced below.

1. A method comprising:

performing asynchronous transfer mode (ATM) segmentation functions with a segmentation and reassembly (SAR) software module implemented in a central processing unit (CPU) of a personal computer including,

receiving data to send;

segmenting the data to generate a plurality of ATM cells;

buffering the plurality of ATM cells in a memory device;

traffic shaping the buffered plurality of ATM cells; and

transmitting the plurality of ATM cells on a network.

THE REFERENCE

The examiner relies on the following reference:

Kwak	6,262,995	July 17, 2001
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THE REJECTION

Claims 1, 4, 5, and 7-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwak.

We refer to the final rejection (Paper No. 16) (pages referred to as "FR__") and the examiner's answer (Paper No. 22) (pages referred to as "EA__") for a statement of the examiner's rejection, and to the brief (Paper No. 21) (pages referred to as "Br__") and reply brief (Paper No. 23) (pages referred to as "RBr__") for a statement of appellants' arguments thereagainst.

OPINION

The claims are grouped to stand or fall together (Br6).

The examiner finds that Kwak discloses the claimed subject matter of claim 1 except that it does not teach that the ATM terminal is a personal computer (FR2). The examiner finds that an ATM terminal is a device that performs telephone service using ATM and that it was well known to use a personal computer to perform multimedia communications including voice communication (FR2-3). The examiner concludes that it would have been obvious to use a personal computer as the ATM terminal of Kwak (FR3).

Appellants argue that "Kwak quite simply does not teach or suggest a *SAR software module implemented in a central processing unit (CPU) of a personal computer to implement segmentation and/or reassembly as set forth in Appellants' independent claims; and, in fact, the ATM terminal of Kwak utilizing a software segmentation and reassembly device (SSID) is the very type of prior art that Appellants' claimed invention was designed to*

improve upon" (Br8). This argument about not teaching or suggesting a segmentation and reassembly (SAR) software module implemented in a CPU of a personal computer is repeated throughout the brief and reply brief.

We see and address two limitations intertwined in appellants' arguments: (1) a SAR software module executed on a CPU; and (2) the CPU is a CPU of a personal computer. Arguments not made are considered to be abandoned and have not been addressed. See 37 CFR § 1.192(c)(8)(iv) (2002) (brief must point out errors in the rejection). Cf. In re Baxter Travenol Labs., 952 F.2d 388, 391, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991) ("It is not the function of this court to examine the claims in greater detail than argued by an appellant, looking for nonobvious distinctions over the prior art."); In re Watts, 354 F.3d 1362, 1367, 69 USPQ2d 1453, 1457 (Fed. Cir. 2004) ("Just as it is important that the PTO in general be barred from raising new arguments on appeal to justify or support a decision of the Board, it is important that the applicant challenging a decision not be permitted to raise arguments on appeal that were not presented to the Board." (Footnote omitted.))

(1)

As to the SAR software module executing on a CPU, the examiner finds that Kwak teaches SAR software at column 1, lines 10-13, and column 2, lines 4-24 (EA5). The examiner states

(EA5): "Although Kwak does not explicitly show a SAR software module in the SSID, [] the SSID, as the name implies, is an interface to the SAR software. Therefore, Kwak definitely teaches the SAR software." The examiner further finds that Kwak teaches that the CPU processes the ATM adaptation layer (AAL) which includes SAR (EA5).

Appellants disagree with the examiner's contention that because Kwak shows an SSID it must teach SAR software and therefore a SAR software module (RBr2). It is argued that Kwak only teaches the SSID and "does not explicitly teach or suggest Appellant's very specific claim limitations relating to performing asynchronous transfer mode (ATM) segmentation and/or reassembly (SAR) functions with a *SAR software module implemented in a central processing unit (CPU) of a personal computer*, among other limitations" (RBr2).

The background of appellants' invention describes that "[t]he functions of the SAR sublayer are typically performed by hardware implemented in the computer such as a SAR chip" (specification, page 3, lines 8-10), which hardware implementation is said to have disadvantages of cost and limited flexibility. When appellants argue that Kwak is directed to "the very type of prior art that Appellants' claimed invention was designed to improve upon" (Br8), we assume that appellants mean that Kwak is directed to a hardware SAR circuit. We disagree.

Kwak discloses that "[a]n ATM terminal indicates a device which performs telephone service using the ATM" (col. 1, lines 19-20). There are four types such as AAL1, AAL2, AAL3/4, and AAL5 in an ATM application layer (AAL) (col. 1, lines 26-27). "[A] conventional ATM exchange employs a segmentation and reassembly (SAR) to allow a central processing unit to process AAL functions." (Col. 1, lines 42-44.) Kwak discloses that "[i]n the conventional apparatus, however, the part for processing the ATM and AAL is formed in hardware, so there are problems that the hardware must be differently configured according to the types of the AAL, such as AAL1, AAL2, AAL3/4, and AAL5, resulting in necessity of creating new hardware design and board" (col. 2, lines 4-9). Kwak discloses performing SAR and AAL functions in connection with a software SAR interface device (SSID). The SSID does not itself perform the SAR function, but is a hardware interface for transferring ATM cells between the UTOPIA interface and the double port RAM under control of the CPU (col. 3, lines 52-60; Fig. 3; col. 4, lines 4-25), which extra hardware is not precluded by the claim language. Segmentation and reassembly (SAR) functions are performed by the CPU, and therefore by software, not by the SSID and not by a hardware SAR chip. Figure 4 shows the flowchart for segmentation of user data read from system memory using AAL1, AAL3/4, and AAL5. Figures 5a-5d show the flowchart for

segmentation and reassembly. Although not clearly described in Kwak, Fig. 5a shows the steps performed by the CPU to perform segmentation using AAL1, to store the ATM cells in the double port RAM if it is not being used by the SSID, and to store the ATM cells in system memory if it is being used and later storing the ATM cells in the double port RAM; Fig. 5b shows the steps performed by the SSID to transmit ATM cells in the double port RAM to the physical layer; Fig. 5c shows the steps performed by the SSID to transfer ATM cells from the physical layer to the double port RAM; and Fig. 5d shows the steps performed by the CPU to perform reassembly on ATM cells in the double port RAM and output the data (col. 4, lines 43-62). The CPU acts on data in the system memory to perform segmentation (Figs. 4 and 5a) and reassembly (Fig. 5d) functions; the SSID only transfers data to and from the double port RAM. The CPU inherently processes software instructions in system memory to perform the SAR functions, and any group of software instructions for performing a function can be considered a "module." For these reasons, we find that Kwak discloses "performing asynchronous transfer mode (ATM) segmentation functions with a segmentation and reassembly (SAR) software module implemented in a central processing unit (CPU)."

(2)

As discussed in section (1), we find that Kwak discloses that the CPU performs SAR functions using software. While the SSID hardware transfers ATM cells to and from the double port RAM, the SSID does not perform SAR as apparently thought by appellants, and the claims do not preclude the presence of an SSID. The issue in this section (2) is whether it would have been obvious for the CPU in Kwak to be the CPU of a personal computer rather than the CPU of an ATM terminal.

As to the difference of the CPU being the CPU of a personal computer rather than the CPU of an ATM, the examiner finds that Kwak teaches that an ATM terminal is a device that performs telephone service using ATM (FR2). The examiner finds that it was well known that personal computers perform multimedia communication and those skilled in the art would have been motivated to use a personal computer as the ATM terminal (FR3).

Appellants argue that the examiner is basically saying that it would have been obvious to one skilled in the art to use a personal computer as the ATM terminal of Kwak and that this misconstrues the legal standards regarding obviousness (RBr3). Appellants refer to Ex parte King, 146 USPQ 590 (Bd. App. 1964) for the proposition that it would not have been obvious to program a general purpose computer to perform a function without some suggestion of the function (RBr4). It is argued that the

invention relates to performing ATM SAR functions with software implemented in the CPU of a personal computer. "On the other hand, Kwak discloses a specialized ATM terminal to perform segmentation and reassembly, and discloses the use of a software segmentation and reassembly device (SSID). This specialized type of ATM terminal is a type of prior art that Appellant's claimed invention was designed to improve upon." (RBr4-5).

We agree with King, which position was adopted by the CCPA in In re Prater, 415 F.2d 1393, 1406, 162 USPQ 541, 551 (1969) ("appellant's invention ... was not obvious under 35 U.S.C. 103 because one not having knowledge of appellant's discovery simply would not know what to program the computer to do"). However, this is not the present fact situation. Here, unlike Prater, the functions to be performed are disclosed. More importantly, we find that Kwak discloses performing ATM SAR functions in software using a CPU. The only issue is whether it would have been obvious for the CPU of Kwak to be the CPU of a personal computer.

Appellants refer (RBr5) to the advantage that "the use of software to perform the segmentation and reassembly reduces the cost" (specification, page 6).

The advantage also applies to Kwak. Kwak's invention is to use software instead of hardware.

Appellants argue (RBr6):

[A]n ATM terminal ... is very different from a general-purpose personal computer that can be programmed, easily updated with new programs, is generally lower cost in nature, is easily replaceable, etc. There is quite simply no motivation to alter Kwak's ATM terminal that performs ATM functions, and that works well for its intended purpose, to, in hindsight, try to recreate Appellant's invention as defined by Appellant's independent claims.

We interpret these arguments to be that the ATM terminal in Kwak performs SAR functions using hardware, rather than the issue of whether it would have been obvious for the CPU of the ATM terminal in Kwak to be the CPU of a personal computer. We conclude that one of ordinary skill in the art would have been motivated to implement the software SAR functions in Kwak on any CPU, including that of a personal computer, to achieve the advantage taught by Kwak of not needing specialized hardware. Furthermore, we agree with the examiner that personal computers perform multimedia communications using ATM data and "the PC becomes an ATM terminal when the PC is equipped with an ATM SAR and related hardware" (EA6). That is, the ATM terminal in Kwak can be an ATM terminal as part of a personal computer. Appellants acknowledge that it was known that personal computers implement an ATM adaptation layer (AAL) using SAR chips (specification, page 3). One of ordinary skill in the art, given the teachings of Kwak to implement the AAL and SAR in software instead of hardware (e.g., col. 2, lines 4-9), would have been motivated to implement the AAL and SAR in software on personal

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computers for the same reason. We conclude that it would have been obvious to implement the software SAR functions taught by Kwak on the CPU of a personal computer.

CONCLUSION

For the reasons stated above, we conclude that appellants' have not shown error in the examiner's rejection. The rejection of claims 1, 4, 5, and 7-16 is sustained.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv) (2004).

AFFIRMED

ERROL A. KRASS
Administrative Patent Judge

Lee E. Barrett
LEE E. BARRETT
Administrative Patent Judge

MAHSHID D. SAADAT
Administrative Patent Judge

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